

Patient and Family Involvement

The You CAN Campaign: Teamwork Training for Patients and Families in Ambulatory Oncology

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Modern medical care requires reliable communication and seamless coordination among members of a multispecialty health care team. Recognizing the value of teamwork in this environment, several organizations have adapted techniques from aviation, such as Crew Resource Management (CRM), and have deployed these approaches in the operating room,¹⁻⁴ on the labor and delivery floor,⁵⁻⁶ in the intensive care unit,⁷ and in the emergency department.⁸⁻⁹ Researchers have not yet demonstrated conclusively the efficacy of this approach in reducing medical errors, but the compelling face validity of these techniques—and their widespread use in aviation—have accelerated their dissemination in health care.¹⁰⁻¹²

Owing in part to their origins in the airplane cockpit, medical team training programs have focused on teamwork behaviors among small groups of practitioners in closed work environments. Although the original CRM methods in aviation were limited to the cockpit crew, CRM in that field has evolved into an approach that now includes pilots, cabin crew, and even passengers. This notion of an inclusive team is particularly appropriate to a medical environment, where care is often distributed in time and place across a wide array of health professionals. In ambulatory care in particular, patients and their families may play an important role as well.

With this perspective in mind, we sought to develop, implement, and evaluate a high-performance teamwork training program for ambulatory patients and their families at a comprehensive cancer center. In creating this demonstration project, we attempted to address several questions. First, was a patient-oriented team training program feasible for an adult ambulatory patient population? Would ambulatory oncology patients understand, value, and use team training techniques that were developed originally for professionals? How could we convey team training information to patients? Would hospital staff be receptive to more engaged and assertive patients? Finally, would it be possible to measure the impact of such an intervention?

Article-at-a-Glance

Background: Health care organizations have begun to adapt high-performance teamwork training techniques from aviation to clinical environments. Oncology care is often delivered in multispecialty teams and with the patient's and family's active involvement. To examine the potential value of a patient-oriented teamwork intervention, a teamwork training initiative for oncology patients and their families was developed at the Dana-Farber Cancer Institute.

Developing the Campaign: The content and format of the initiative evolved iteratively on the basis of several core team-training concepts derived from the research literature in health care and aviation. Initially a targeted intervention, the program evolved into a multifaceted campaign that included internal marketing, staff training, and one-on-one patient outreach by a group of volunteers. The You CAN campaign sought to convey a positive and empowering message that encouraged patients to (1) check for hazards in the environment, (2) ask questions of clinicians, and (3) notify staff of safety concerns.

Implementing the Campaign: The You CAN campaign was conducted from July through September 2007. To assess its progress, patients were surveyed at baseline and during the campaign. On the basis of the survey results, 32% (95% confidence interval [CI]: 25%–38%) of the ambulatory clinic population, or 1,145 patients, were exposed to the campaign. Although patients rated the quality of teamwork and communication favorably at both baseline and follow-up, there was no significant change in the self-reported use of teamwork techniques on a written survey. However, 39% (95% CI: 27%–51%) of those who were exposed to the campaign said that it changed their behavior.

Discussion: A training program for patients and their families is feasible in ambulatory oncology and may be applicable to other clinical settings.

Developing the You CAN Campaign

SETTING

Dana-Farber Cancer Institute (DFCI) is a Boston-based comprehensive cancer center. Clinical services at DFCI include disease-focused programs in hematologic and solid tumor malignancies for adults and children and an extensive research program. DFCI employs 3,154 staff members, including 161 physicians and 209 nurses. Physicians and nurse practitioners saw ambulatory patients in three adult clinics and one pediatric clinic for approximately 150,000 visits in 2007.

CONTENT DEVELOPMENT

The content and format of the initiative evolved iteratively on the basis of several core team training concepts derived from the research literature in health care and aviation. We searched bibliographies for relevant references^{1,13} and reviewed the Web sites of the University of Texas Human Factors Research Project¹⁴ and the Stanford-based Anesthesia Crisis Resource Management.¹⁵⁻¹⁶ We interviewed local and national experts on medical simulation and teamwork training, and we observed teamwork training sessions in the surgery and obstetrics-gynecology departments of local hospitals. On the basis of our research, we chose to emphasize four principles of teamwork training that seemed likely to be useful to oncology patients: (1) situational awareness, (2) appropriate assertiveness, (3) closed-loop communication, and (4) briefings. These concepts are described in Table 1 (right).

The staff of the DFCI's Center for Patient Safety, an interdisciplinary group of clinicians, educators, and researchers, sought to translate these principles into concepts that were recognizable to patients and that resonated with their experiences. We recruited patient volunteers from DFCI's adult patient and family advisory council to review case scenarios that had been prepared for patient education and a presentation originally developed for medical house officers, which we adapted to suit a patient and family audience.¹⁷ The presentation traced the origins of team training and its applications in medicine, described four core teamwork principles, and included several case scenarios for discussion. Our intention was to conduct focused, hour-long trainings in communication techniques for patients and families. We advertised these sessions internally via posters and plasma screen displays for three months, but no one attended these sessions.

Sobered by this response, we revisited our initial approach with the help of nine volunteers from the hospital's patient/family relations "volunteer rounding" program. The program, initiated in 1996, consists of a group of volunteers

Table 1. Teamwork Principles Used in Patient Team Training Initiative

Situational awareness is defined by Endsley and colleagues as "the perception of the elements in the environment within a volume of time and space, the comprehension of their meaning, and the projection of their status in the near future."^{18(p. 97)} It is the ability to remain mindful of the "big picture," even when focused on resolving a specific issue.

Appropriate assertiveness, or verbal assertion, is a conflict-minimizing method of voicing concerns. Individuals state their viewpoints aloud and, if possible, suggest an alternative course of action. Team members are then obligated to acknowledge those concerns – even if they disagree – and to justify their decision to pursue the original plan or to modify it.

Closed-loop communication preserves the integrity of a message through repetition. When a request is made or information presented, team members verbally acknowledge it. They commit to completing the task, and verbally confirm when it has been completed.

Briefings and debriefings are concise dialogues between team members that convey relevant information, both prior to and following a procedure or activity. Briefings help ensure that all members of the team have a shared understanding of the situation.[†]

* Endsley M.R.: Design and evaluation for situation awareness enhancement. In *Proceedings of the Human Factors Society 32nd Annual Meeting*, Oct. 24–28, 1988. Santa Monica, CA: Human Factors Society, 1988, pp. 97–101.

† Frankel A., et al.: Using the Communication and Teamwork Skills (CATS) Assessment to measure health care team performance. *Jt Comm J Qual Patient Saf* 33:549–558, Sep. 2007.

who visit patients and their family members in the waiting and chemotherapy infusion areas of our ambulatory clinics, providing information and companionship while eliciting feedback.

The volunteers suggested that many patients were exhausted after their treatments and eager to go home. Others had work or family responsibilities that required attention. Reaching out to patients and families before or during (rather than after) their clinic or infusion visit would be a more fruitful approach than an afternoon seminar. They also suggested that we revisit our strategy, simplifying and condensing the message to make it more accessible to patients with various levels of health literacy, interest, and attentiveness. They observed that many patients are apprehensive while awaiting clinic visits and that their ability to participate in a training program may be limited by the effects of chemotherapy or the medications given prior to it ("pre-meds"). Rather than a formal training course or targeted intervention, the volunteers asserted, a patient awareness campaign would better accommodate patient needs while disseminating important teamwork skills. In addition, the vol-

unteers advocated for a shift in focus from the abstract teamwork principles used for educating health care professionals to a more patient-centered approach that identified the specific clinical hazards that the principle-based techniques were designed to ameliorate. This approach would allow patients to apply the techniques in a purposeful way. Finally, the volunteers emphasized that patients might be reluctant to adopt teamwork behaviors unless they knew staff to be receptive, and they encouraged us to garner support for the initiative among medical and nursing personnel.

REFINING THE YOU CAN CAMPAIGN

We developed the You CAN teamwork training campaign iteratively and with feedback from multiple stakeholders, including the DFCI pediatric and adult patient and family advisory councils, administrative leaders and clinical staff, health educators, and communications specialists. The program and its slogan were intended to encourage—but not obligate—patients to use teamwork techniques to partner more effectively with their health care providers. CAN was also an acronym for “Check. Ask. Notify.”—three action-oriented steps that encapsulate the teamwork concepts selected from the research literature. We hoped that by adopting these practices, patients could help address three leading patient safety hazards in our ambulatory oncology environment:

1. Administration of the wrong chemotherapy drug
2. Infections related to inadequate hand hygiene
3. Failure to communicate last-minute dose changes effectively

The components of the You CAN message are listed in Table 2 (right).

Implementing the You CAN Campaign

We used a variety of approaches to introduce and disseminate the program over the course of a three-month campaign.

PRINT AND PROMOTIONAL MATERIALS

We developed a brochure that explained the rationale for the program and described its core content. Posters were prepared for plasma screen displays in high-traffic areas and were placed in examination rooms and treatment areas. We authored articles for internal newsletters and for a patient safety bulletin disseminated to almost 3,000 staff. In addition, we designed and purchased promotional giveaways featuring the campaign logo, including pins, pens, and coffee mugs, to attract attention while advertising the initiative to both patients and staff (Figure 1, right).

Table 2. You CAN Campaign Messages

Check. To convey the concept of *situational awareness*, the campaign encouraged patients to pay attention to the details of their care, and to check at each visit to make sure things “looked right.”

■ Was their chemotherapy the same color as it was at the last treatment?

■ Were their pills the same color and shape?

Recognizing that sick patients may not feel capable of this kind of vigilance, patients were encouraged to bring along a friend or family member, when possible, as an extra set of eyes and ears.

Ask. Asking questions was a way for patients to actively engage with their caregivers by employing *appropriate assertiveness*. Patients were encouraged to

■ Ask about the potential side effects of their medicines and how best to manage them

■ Ask their health care providers if they washed their hands and to repeat anything patients did not hear or understand

By asking for clarification and repeating important information aloud, patients could utilize *closed-loop communication* to ensure that messages were acknowledged and understood.

Notify. To facilitate the exchange of new information among patients and providers, the campaign urged patients to *brief* their caregivers about any side effects they had experienced between visits and any significant changes to their care. Specifically, patients could relay any last-minute changes made to treatment orders by their physicians to the nurses at infusion, minimizing the possibility of chemotherapy misadministration.

Print and Promotional Materials Developed for the You CAN Campaign



Figure 1. The You CAN campaign included a brochure, a wallet card (front and back), and a coffee mug.

LOBBY DISPLAYS

We arranged an informational display in DFCI's lobby during the first and last months of the campaign. Volunteers and staff members offered print and other promotional materials to patients and family members, engaging more than 370 individuals one-on-one while increasing campaign awareness and visibility.

VOLUNTEER ROUNDERS

A critical component of the campaign was the continued participation of the volunteer rounders who had helped to develop the program. They served as ambassadors for the initiative, incorporating the teamwork training skills and materials into their daily rounding activities. During the course of the campaign, volunteer rounders visited waiting and treatment areas on most weekdays, meeting with and counseling 5 to 10 patients per session for a total of 168 face-to-face interactions. After gauging the interest of patients and their companions, volunteers provided written materials and, if appropriate, used role-playing techniques to model, for example, the assertive but respectful way a patient might ask a provider if he or she had disinfected his or her hands. Volunteers distributed wallet card checklists, reminding patients to check that their chemotherapy looked right, to ask providers what to expect during treatment, and to notify nurses of any last-minute changes in therapy. Finally, at the conclusion of each interaction, volunteers thanked participants with campaign giveaways to reinforce the teamwork message and to generate enthusiasm for the initiative.

STAFF OUTREACH

The patient volunteers were particularly concerned about taking measures to ensure the support of clinical staff. Without buy-in from doctors, nurses, and other personnel, the use of teamwork techniques might be perceived as antagonistic or could create a confrontational atmosphere. For the initiative to succeed, patients had to be seen as active collaborators. And for patients to be comfortable using the techniques, staff members had to be prepared to acknowledge and welcome the behavior.

To address this issue, a member of the project team visited frontline personnel in each of the clinic and treatment areas to inform them of the program, to elicit their advice, and to encourage them to respond to patient assertiveness with positive reinforcement. We returned regularly to clinical areas to seek feedback and to identify problems or concerns. In addition, we attended oncology disease group meetings to solicit support from physicians. Expressing a common sentiment, one

nurse noted that "these [teamwork skills] are things many of our patients do already, but it's valuable to let them know that the hospital is behind them and supports their efforts." Many providers chose to wear a "Teamwork for Safe Care" button to signal their support and to indicate to patients that engagement was both expected and welcomed.

Results

PROGRAM EVALUATION

We assessed the impact of the program using a variety of methods. We modified an instrument developed by Frankel and colleagues¹⁸ on the basis of the aviation Line Operation Safety Audits (LOSA),¹⁹ to conduct direct observations of the interactions between patients and infusion room nurses. The layout of the infusion unit, however, and the timing of patient-provider interactions made unobtrusive observations impractical. Similarly, we abandoned a clinician survey evaluation due to difficulties with distribution.

ANECDOTAL REPORTS

Informal and anecdotal information collected from patients, staff, and volunteer rounders was largely positive. Reflecting an initial concern of the volunteer rounders, some patients wondered if their physicians and nurses knew about the program and were "on board." Some wanted assurance that their engagement would be welcomed by those responsible for their care. For other patients, the campaign provided an official endorsement of behaviors they found helpful, if not always comfortable. "You sometimes feel like you're going to get a black check mark next to your name for asking questions," said one patient. "This [program] will help because staff will know why I'm asking."

Of all the teamwork behaviors the campaign encouraged, asking providers if they disinfected their hands posed the greatest challenge for patients and their companions. Yet both patients and volunteers agreed that the campaign made doing so a bit easier. One volunteer rounder said that patients were "receptive to the reminders about hand washing... Somehow, [the campaign] seemed to legitimize things for them." Even patients who already employed teamwork techniques appreciated the initiative. "I already do all this," said one patient, "but it's a great idea."

PATIENT SURVEYS

Instrument development. We developed a 26-item written survey to probe patients' perspectives on the quality of teamwork in their care and their attitudes toward—and their expe-

Table 3. Respondent Characteristics at Baseline and Follow-Up*

Characteristic	Baseline (N = 203)	Follow up (N = 201)	P Value
Age in years: Mean (range), S.D.	54.0 (18–83), 13.1	57.5 (20–84), 13.5	.002
Male, no. (% [†])	72 (35.8)	105 (53.0)	.001
Nonwhite, no. (% [†])	4 (2.0)	16 (8.0)	.008
Hispanic, no. (% [†])	3 (1.6)	5 (2.7)	.447
Non-English native speaker, no. (% [†])	9 (4.6)	12 (6.0)	.538
Health insurance, no. (% [†]) [‡]			
Commercial Insurance	171 (87.7)	166 (84.7)	.391
Medicare	50 (25.6)	59 (30.0)	.342
Medicaid	5 (2.6)	5 (2.5)	.987
None	0 (0.0)	1 (0.5)	.320
Years as a cancer center patient: Mean (range), S.D.	2.3 (0.01–45), 4.1	2.5 (0.02–44), 4.2	.867

* S.D., standard deviation.

[†] Because respondents did not answer every question, percentages exclude nonresponders.

[‡] Percentages may exceed 100% due to patients with multiple insurance plans.

periences with—team training techniques. The survey instrument was adapted from a previous survey delivered by patient volunteers at DFCI²⁰ that included closed- and open-ended questions about quality of care and patient safety. In addition, we asked questions about patients' attitudes and experiences with respect to the team training techniques that were the core content of the You CAN campaign. For example, to assess situational awareness, we asked whether patients would notice if the color of their chemotherapy infusion bag or their pills was different than usual. To evaluate appropriate assertiveness, we asked whether patients would feel comfortable asking their clinicians if they washed their hands, and for closed-loop communication we asked how often patients clarified unclear instructions or explanations with their health care providers. To probe patients' experiences with briefing, we asked whether, at their last chemotherapy infusion treatment, a nurse told them what side effects to expect. We piloted the survey with patients in the waiting rooms and infusion areas and modified it on the basis of feedback from respondents and volunteer rounders.

Survey administration. Volunteer rounders and Center for Patient Safety staff members conducted a baseline survey one month before the start of the You CAN campaign by hand-delivering the survey to a convenience sample of adult DFCI patients in clinic waiting areas and chemotherapy infusion units. Efforts were made to avoid selection bias on the basis of age, race, language, or other factors. Surveys were available in both English and Spanish, and interpreters were on call to assist as needed. We excluded patients who had completed treatment and were preparing to leave the hospital, those who were unable to participate because they were medicated and lacked a surrogate, and those who did not have sufficient time to complete

the survey before their scheduled appointment. A follow-up survey was administered in a similar fashion during the last two months of the three-month campaign to assess the campaign's impact and any incremental value associated with its duration. Both surveys were reviewed in advance by the hospital's investigational review board.

Two hundred and three (86%) of 237 eligible patients completed the baseline survey, and 201 (78%) of 257 patients completed the follow-up survey. The most common reasons given for declining the survey were fatigue, illness, and a reluctance to interrupt time with companions.

Analyses. We entered patient survey data into an electronic database and used Stata 9.0 (Stata Corp; College Station, Texas) to calculate summary statistics. We compared baseline and follow-up responses using the Wilcoxon rank-sum test for continuous variables and the chi-square statistic for categorical variables. We also compared responses from patients at baseline with those of follow-up respondents who indicated that they were exposed to the You CAN campaign. Exposure was ascertained by a response of "probably" or "definitely" to any one of three questions addressing whether respondents were aware of the campaign, whether they had seen campaign posters or brochures, or whether they had been approached by anyone to discuss the campaign. We also created multivariable logistic regression models to examine the relationship between survey responses in the baseline and follow-up periods, controlling for sociodemographic factors, date, and exposure to the campaign.

Results. Respondent characteristics at baseline and follow-up were similar with respect to ethnicity, native language, health insurance, and years as a cancer patient (Table 3, above). The follow-up group was older on average (mean age, 58 versus 54

Table 4. Patient Perceptions of Teamwork and Communication at Baseline and Follow-Up

Question	Baseline (N = 203)		Follow up (N = 201)		P Value
	n	%	n	%	
How would you rate the quality of teamwork among your health providers?					.466
Excellent	170	84.6	161	82.1	
Good	29	14.4	28	14.3	
Fair	1	0.5	4	2.0	
Poor	1	0.5	3	1.5	
Total	201		196		
How would you rate the way your doctors and nurses communicate with each other about your care?					.464
Excellent	159	79.5	152	77.2	
Good	40	20.0	37	18.8	
Fair	0	0	5	2.5	
Poor	1	0.5	3	1.5	
Total	200		197		
How would you rate the way doctors and nurses communicate with patients and their families about their care?					.205
Excellent	158	79.0	166	83.8	
Good	38	19.0	30	15.2	
Fair	3	1.5	1	0.5	
Poor	1	0.5	1	0.5	
Total	200		198		

years, $p = .002$) and included more men (53% versus 36%, $p = .001$) and more nonwhites (8% versus 2%, $p = .008$).

Respondents' perceptions of teamwork and communication at the hospital were highly favorable at baseline and follow-up, with ratings of good or excellent exceeding 97% for each item (Table 4, above). In contrast, we noted considerable variation in patients' experiences with teamwork behaviors that employed situational awareness, appropriate assertiveness, closed-loop communication, and briefings. For example, in assessing situational awareness, we found that 81% of patients at baseline reported that they would notice changes to the usual color of their chemotherapy infusion bag or pills, whereas only 45% of patients at baseline would be comfortable asking a health care provider if he or she washed his or her hands. By contrast, 92% of patients indicated they utilized closed-loop communication, asking clinicians for clarification when they did not understand an explanation or instruction. Almost 97% reported being briefed by a nurse at their last chemotherapy infusion as to what medications they would receive.

However, in none of these comparisons was there a statistically significant difference from baseline to follow-up. When we limited the comparison to respondents at baseline versus

those at follow up who had been exposed to the campaign, the only significant difference was that nurses told respondents who were exposed to the campaign what to expect during treatment 100% of the time compared to 87% in the baseline group ($p = .005$).

Overall, 64 (32%; 95% confidence interval [CI]: 25%–38%) of 201 respondents indicated that they had been exposed to the campaign and its message. As shown in Table 5 (page 69), 45 (22%) said that they were "aware" of the campaign, 45 (22%) saw campaign posters and brochures, and 23 (11%) said that someone had approached them about the campaign. As the campaign progressed, the exposure rate increased from 26% during the second month of the campaign to 40% in the final month. Because the demographic profile of respondents was similar to that of the general clinic population, we extrapolated the exposure rate of the sample to the adult ambulatory clinic volume during the campaign. This calculation may over- or underestimate the true number of exposed patients because we do not know the exposure rate of individuals who were not surveyed. With this caveat in mind, we estimated that about 1,000 (1,145; 95% CI:911–1,379) patients were exposed to the campaign.

Table 5. Patient-Reported Exposure to the You CAN Campaign

Question	Month 2 (n = 118)		Month 3 (n = 83)		Total (n = 201)		P Value
	n	%	n	%	n	%	
Were you aware that Dana-Farber has been conducting a patient safety campaign for the last few months encouraging patients to "Check. Ask. Notify"?*	19	16.1	26	31.3	45	22.4	.011
Have you seen posters or brochures at Dana-Farber recently encouraging patients to "Check. Ask. Notify"?*	16	13.6	29	34.9	45	22.4	< .001
Has anyone approached you during the last 3 months at Dana-Farber to discuss the campaign and ways to "Check. Ask. Notify"?*	14	11.9	9	10.8	23	11.4	.823
Patient exposed to any intervention (total)	31	26.3	33	39.8	64	31.8	.044
Number of exposures per patient							.016
Zero	87	73.7	50	60.2	137	68.2	
One	17	14.4	8	9.6	25	12.4	
Two	10	8.5	19	22.9	29	14.4	
Three	4	3.4	6	7.2	10	5.0	
Has this campaign caused you to change your behavior in any way?*	20	17.0	20	24.1	40	19.9	.213

* n values include respondents answering "Definitely" or "Probably."

Although we were unable to demonstrate a change in patients' teamwork attitudes and experiences based on the survey questionnaire, patients themselves endorsed the impact of the campaign on their own behavior. Forty (20%) of 201 patients at follow-up indicated that their behavior had changed as a result of the campaign (17% in month 2 compared with 24% in month 3). Of the 64 respondents who indicated that they were aware of the campaign, saw posters and brochures, or spoke with someone about it, 25 (39%; 95% CI:27%–51%) reported that their behavior changed as a result.

Discussion

We developed, implemented, and evaluated a team training program for adult ambulatory oncology patients and their families. We learned that many of the teamwork training concepts used in aviation and in various medical environments could be adapted for oncology patients and their families. Working closely with a group of volunteers and reaching out to a diverse set of stakeholders yielded significant benefits. The involvement of volunteers, including patient and family members, was essential to the design and delivery of the teamwork program. Their enthusiasm and advice allowed us to abandon a failing seminar format in favor of a broad-based campaign that brought content to patients awaiting visits or receiving infusion

treatments. This content, we learned, needed to be simple, clear, and concise. It needed to be delivered in a visually appealing and recognizable way through multiple modalities, including face-to-face coaching.

Did team training for patients have an impact on patients' behavior? The campaign reached one third of the patients, and 39% of the patients who were exposed to the campaign said that it changed their behavior. Although patients reported that the campaign affected their behavior, it was difficult to corroborate this information. It was not feasible to collect direct observational data of patients in our clinical areas. Direct observations could help to understand how teamwork training affected passive behaviors (such as noticing a medication error) and active ones (such as asking a clinician about the error). In addition, patient survey responses at baseline and follow-up showed no significant change in respondents' attitudes or experiences using teamwork techniques. This null finding may be the result of several factors: (a) The survey questions may have been poorly constructed or ambiguous; (b) patients may have lacked the opportunity between campaign introduction and evaluation to use the specific teamwork skills presented; (c) many patients already practiced the teamwork skills *before* the campaign began, making incremental improvements difficult to demonstrate; and (d) the number (64) of patients at follow-

up who were exposed to the campaign limited the statistical power to detect a treatment effect of less than 15%. Nevertheless, patients' perception that their behavior had changed as a result of the campaign is encouraging. Perhaps a more sensitive instrument or larger sample would allow for measurement of these behaviors.

Demonstrating improvement in clinical outcomes from team training interventions is challenging for a number of reasons, including the relative infrequency of adverse events and the distant relationship between teamwork training and measurable patient safety outcomes. Research studies to date, including studies of the impact of teamwork training in civilian and military U.S. emergency departments and in labor and delivery suites, have shown equivocal results.^{5-8,21} Such is the case in aviation as well, where researchers have demonstrated more successfully the impact of team training on processes (teamwork interactions) than on outcomes (accidents and close calls).¹ Our attempts to complete behavioral observations of teamwork behavior were frustrated by the layout of the clinic, which made it difficult to assess clinical care unobtrusively. Accordingly, the development of observational measurement tools is as an important area of future research.

Given the difficulty of demonstrating direct improvements in patient care outcomes, much of the support for teamwork training rests on its face validity, perceptions and experiences of participants, and subjective observations of the quality of team performance and communication. By these measures, teamwork training for patients is promising, particularly in environments where patients are *compos mentis* or are accompanied by surrogates. Equipping patients with specific teamwork skills may empower them to play a more active role in their care and to engage more collaboratively with their health care professionals. In fact, early studies of asthma, diabetes, and coronary artery disease management have demonstrated that patient empowerment can make a significant impact on clinical outcomes in these areas.²²⁻²⁷ By extension, teamwork training may have a subtle, but critical impact on patient safety. Other studies have shown that patients are astute observers of their care, noticing potential problems that may have escaped clinicians.^{20,28} When patients do communicate critical information, particularly about adverse drug events, many of these events are preventable or ameliorable.²⁹

Teamwork training initiatives targeting patients, as opposed to providers, may not work in all patient care environments. Some patients may be too ill to practice teamwork behaviors and may lack family or friends who can do so on their behalf. Others may not be able to participate because they lack the req-

uisite health literacy to learn or use teamwork concepts effectively.^{30,31} In environments where the professional staff is unsupportive or the hospital culture is hierarchical, elitist, or paternalistic, these approaches also may not be well received or disseminated.³¹ The acceptance of the initiative among the clinical staff likely reflected our organization's longstanding promotion of a safety culture and the existence of an environment in which a high degree of patient engagement was both welcome and expected. The availability and commitment of patient volunteers was also instrumental in the program's implementation. More than a year after initiation of the program, the volunteers continue to carry the message and campaign materials to patients in clinic and infusion areas. The hospital's board-level quality committee has reviewed and endorsed the program and has mandated that patient teamwork materials be provided to every new patient.

The demonstration project described here represents one approach to teamwork training for patients. We drew on the strengths of the participating institution, including its volunteer rounding program and the patient and family advisory councils, to facilitate both the design and implementation of the initiative. We used our best judgment to select from the teamwork and human factors literature the core concepts that would be most appropriate for an ambulatory oncology environment, although other formulations emphasizing a different set of concepts might be equally viable. Indeed, the "appropriate" extent of patient engagement in patient safety is not well defined. Entwistle and colleagues³² have argued against shifting the responsibility for safe care from professional caregivers to patients and families—a perspective that we share. On the other hand, patients and families may represent a neglected source of resilience in health care organizations. Exploring the opportunities and limitations of patient engagement in ensuring safe care is an important emerging area of research and practice.

Conclusion

Patient, family, volunteer, and staff feedback suggest that the You CAN campaign was well accepted. We believe that teamwork training for patients and families shows potential but requires replication as well as longitudinal and observational follow-up in oncology as well as other patient groups. **J**

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